What is posture?
Vertebral Alignment

• The spine has a series of counter-balancing anterior-posterior curves

• These curves:
  ▫ Act as shock absorbers
  ▫ Reduce the amount of injury
Postural Curves

Convex & Concave

- the reference point is the posterior aspect

- Cervical Lordosis
- Thoracic Kyphosis
- Lumbar Lordosis
- Sacral Kyphosis

Lippert, p329
Curves

► At birth, the entire spine is flexed

► **Primary Curves**: curves of the spine found at birth. Those that retain this flexed position are the __________________ and __________________

► **Secondary Curves**: appear as the child grows. Cervical and lumbar spines become lordotic
Disk Pressures in Various Positions

Lippert, p335
Standing Posture

Classically, ideal postural alignment (viewed from the side) is defined as a straight line that passes through the:

- ear lobe
- bodies of the cervical vertebrae
- Acromion
- bodies of the lumbar vertebrae
- slightly posterior to the hip joint
- slightly anterior to the axis of the knee joint
- just anterior to the lateral malleolus
Postural Assessment: Standing

**ANTERIOR VIEW**

- The head should be in midline. If not, why?
- The trapezius neckline should be equal on both sides
- The shoulders should be level
- The clavicles & AC joints should be level & equal
- There should be no protrusion or depression of the sternum or ribs

Lippert, p332-333
Postural Assessment: Standing

- Arms should be equidistant from the waist
- Carrying angle at each elbow should be equal
- The palms should face the body while in a relaxed position
- Iliac crest & ASIS height should be the same on each side
Postural Assessment: Standing

► Both patella should point straight ahead
► Knees should be straight
► Fibular heads should be level
► Two arches are present & equal in the feet
► The feet angle out equally
► No bowing of bone
► Bony & soft tissue contours are equally symmetric on the 2 halves of the body
Postural Assessment: Standing

LATERAL VIEW

- The earlobe should be in line with the acromion process
- Each spinal segment should have a normal curve
- Shoulders should not droop forward
- There should be no chest deformities
- In normal standing, the knees are usually slightly flexed (0-5°)

Lippert, p332-333
Postural Assessment: Standing

POSTERIOR VIEW

- Head should be in midline
- Shoulders should be level
- The spines & inferior angles of the scapula should be level & medial borders equidistant form the spine
- The spine should not have lateral curves
- The PSISs are level
- The gluteal folds are level
Postural Assessment: Standing

- Knees should be level
- Both achilles tendons should descend straight to the calcanei
- The heels should be straight
- Bowing of the femur or tibia should be absent
Sitting Posture

- Proper sitting posture involves maintaining the proper postural curves
1. Visual Display Terminals (VDT) within the normal cone of vision (0° to 30°).
2. Ears, shoulders, and hips line up vertically.
3. Elbows bent at 90° angle while using keyboard (range 70° to 110°) upper arm pointing towards floor.
4. Elbows bent at 90° angle while using mouse.
5. Hips as far back on chair as possible and bent at 100° to 120°.
6. No sharp edges pressing into employee.
7. Adequate thigh and leg clearance.
8. Knees bent at a 90° angle (range 70° to 110°).
9. Feet supported.

Figure 1

12 lb. 32 lb. 42 lb.

Lippert, p335
Supine Posture

- The least amount of intervertebral disk pressure
- What can we do to improve supine posture?
Prone Posture

• What can we do to improve prone posture?

• http://www.youtube.com/watch?v=qOoFjMyWqyQ
Reference